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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,898	12/31/2003	Paul J. Buras	API-1022-COS-921	8912
25264	7590	06/30/2011	EXAMINER	
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HOUSTON, TX 77267-4412			ART UNIT	PAPER NUMBER
			1732	
			MAIL DATE	DELIVERY MODE
			06/30/2011	PAPER

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PAUL J. BURAS, WILLIAM LEE, and  
JAMES R. BUTLER

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Appeal 2010-004320  
Application 10/749,898  
Technology Center 1700

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Before CATHERINE Q. TIMM, JEFFREY T. SMITH, and  
BEVERLY A. FRANKLIN, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 1, 3, 7, 9, 30 and 33. We have jurisdiction under 35 U.S.C. § 6.

Appellants' invention relates to a method of "obtaining bitumens or bitumens that have reduced hydrogen sulfide evolution." Spec 1. Claim 1 is illustrative:

1. A method of preparing asphalt, comprising:

adding from 0.05 wt.% to 3.0 wt.% zinc oxide to asphalt wherein the zinc oxide reduces hydrogen sulfide emissions; and

adding a crosslinker to the zinc oxide, the asphalt or combinations thereof, wherein the crosslinker is selected from dithiocarbamates, alkyl polysulfides, ester polysulfides, and mixtures thereof.

The Examiner relied on the following references in rejecting the appealed subject matter:

Trinh et al.	US 5,104,916	April 14, 1992
Butler et al.	US 6,767,939 B2	July 27, 2004

Appellants request review of the following rejections from the Examiner's final office action:

1. Claims 1, 3, 7, 9, 30 and 33 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Butler.
2. Claims 1, 3, 4, 7, 9, 30 and 33 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Trinh.

OPINION

*The prior art rejections*<sup>1</sup>

The Examiner found that Butler teaches an asphalt composition comprising zinc oxide in amounts that render the claimed subject matter unpatentable. *See Ans.* 4; Butler Table 5. The Examiner also found that Butler teaches the addition of another crosslinking agent (mercaptobenzothiazole or MBT) that is different from the claimed invention. *Ans.* 4. The Examiner further found that paragraph [0031] of the Specification discloses art recognized conventional crosslinking agents for asphalts. The relevant portion of paragraph [0031] of the Specification is reproduced below:

[0031] In one alternate, non-limiting embodiment of the invention, at least a portion of, or optionally all of, *a conventional sulfur-containing derivative (e.g. mercaptobenzothiazole (MBT), thiurams, dithiocarbamates, mercaptobenzimidazole (MBI) and/or elemental sulfur crosslinker for use in asphalts* is replaced with an alkyl polysulfide and/or an ester polysulfide . . . .  
(emphasis added).

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<sup>1</sup> Appellants have not argued dependent claims 3, 7, 9, 30 and 33 separately. Accordingly, the dependent claims stand or fall together with independent claim 1. We will limit our discussion to independent claim 1.

The dispositive issue on appeal is: Did the Examiner err in determining that a person having ordinary skill in the art would have used the conventional crosslinking agents (i.e., dithiocarbamates) in the process of Butler as required by the subject matter of independent claim 1?<sup>2</sup>

We answer this question in the negative; therefore we affirm.

Appellants argue that the Examiner is reading the statement concerning conventional sulfur-containing derivatives out of context. App. Br. 3. According to Appellants, “such statement does not teach that all conventional sulfur-containing derivatives are interchangeable.” *Id.*

The Examiner responds that “[p]aragraph [0031] of the instant specification admits that MBT and dithiocarbamates are known to function as conventional crosslinking agent[s] for asphalt compositions.” Ans. 4-5. We recognize that the Specification discloses replacing the conventional asphalt crosslinkers in an alternative embodiment. But, we are unpersuaded by this argument and agree with the Examiner’s reasoning that it would have been obvious to a person of ordinary skill in the art to at least partially substitute MBT with dithiocarbamates as the cross-linking agent in Butler. Ans. 5. The idea of using mixtures of known conventional cross-linking agents in an asphalt composition flows logically from there having been individually recognized for use in asphalt compositions. *In re Kerkhoven*, 626 F.2d 846, 850 (CCPA 1980). One of ordinary skill in the art would

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<sup>2</sup> The same reasoning would also apply to the rejection over Trinh. (i.e., the issue is substantially the same: Did the Examiner err in determining that a person having ordinary skill in the art would have used the conventional crosslinking agents (i.e., dithiocarbamates) in the process of Trinh.). Appellants have stated that they are relying on the same arguments for both rejections. App. Br. 4.

reasonably expect that the use of mixtures of conventional cross-linking agents when used in combination, would each produce the same effect as when used individually and would supplement each other. Appellants have not refuted the Examiner's position. Appellants also have failed to assert that MBT, thiurams, dithiocarbamates, mercaptobenzimidazole and elemental sulfur are not recognized as conventional cross-linkers for asphalt compositions.

Appellants also argue "the replacement of MBT with the claimed crosslinking agents, in addition to an additional amount over the crosslinking compositions of zinc oxide, to result in an asphalt preparation process having reduced sulfide emissions is not capable of instant and unquestionable demonstration as being well-known." App. Br. 4.

Appellants appear to be arguing that the claimed invention results in unexpected results. However, Appellants point to no evidence to support this statement. Furthermore, the subject matter of claim 1 reads on any amount of reduction in sulfide emissions.

Appellants further argue that "it has been discovered than [sic] 'an excess of metal salt . . . from what is normally used' (e.g., for cross-linking purposes) 'may inhibit the evolution or formation of H<sub>2</sub>S.'" App. Br. 3-4. According to Appellants, "*Butler* does not teach, show or suggest adding from 0.05 wt. % to 3.0 wt. % zinc oxide to asphalt wherein the zinc oxide reduces hydrogen sulfide emissions, as recited by the pending claims." *Id.*, emphasis in original.

We refer Appellants to Table 5 of *Butler* which teaches adding zinc oxide in amounts within the claimed range. We agree with the Examiner

that the reduction of hydrogen sulfide is a consequence of the result of using zinc oxide as a crosslinking agent.

For the foregoing reasons and those presented by the Examiner, we affirm the stated rejection of independent claim 1.

Since no dependent claim is argued separately, we also affirm the rejection of claims 3, 7, 9, 30 and 33.

Appellant relies on the same line of arguments to address the Examiner's rejection of claims 1, 3, 7, 9, 30 and 33 as unpatentable over Trinh. App Br. 4. Accordingly, we affirm this rejection as well for the reasons stated above.

#### ORDER

The rejection of claims 1, 3, 7, 9, 30 and 33 under 35 USC § 103(a) as unpatentable over Butler is affirmed.

The rejection of claims 1, 3, 7, 9, 30 and 33 under 35 USC § 103(a) as unpatentable over Trinh is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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